

**Giordano Bruno,  
The “Errant” Prophet of Infinite Universe**

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As we delve into the studies of Giordano Bruno, through the most up-to-date academic research on his life and work, we can see how much the popular version differs from what the most dedicated researchers of the present day conclude about him. Because of his moving martyrdom, Catholics, esotericists, anti-Catholic and atheists interpret and report his life and his thinking in their own way, filtering and disseminating only what they want the public to believe. Sometimes myths about Bruno are invented in order to increase the injustice of his condemnation and execution on February 17, 1600, at Campo dei Fiori, in Rome, and consequently amplify the commotion.

First, it should be made clear that the study below does not seek to disparage Bruno's thought as a whole, but rather to demonstrate that, outside the context of Renaissance culture, his cosmological conceptions were futile in the future. On the contrary, when we situate him in Renaissance, he was a well-engaged philosopher in Renaissance movement. Therefore, to understand Bruno, one must first know the Renaissance culture.<sup>1</sup> So, the following study seeks to show the serious problems that occur when Giordano Bruno is known only through his seemingly prophetic cosmological presumptions,

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<sup>1</sup> For a study of Bruno in the context of Renaissance science, the work indicated is *Giordano Bruno and Renaissance Science* by Hilary Gatti, 1999.

that is, his famous allegation that the universe is infinite and that around stars orbit planets such as our Solar System, excluding so an enormity of other fanciful speculations, some even comical to the current level of astronomical knowledge.

Therefore, the study below intends to inform and analyze, from the original sources, as well as through the works of the most dedicated and enlightened academic researchers of present day, who was Giordano Bruno naked of the exaltations, based on the biographies that exclude the hagiographic<sup>2</sup> character of his life. As well as his cosmological speculations,<sup>3</sup> without the ideological interferences of the dazzled exponents. In addition, to point out the overvaluations of his admirers that contrast with the measured evaluations of historians.

## Introduction

When a spectacular discovery happens, we always find religious, mystics or esotericists eager to point out religious authors who have stated similar idea in the past, claiming that they

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<sup>2</sup> The term hagiography derives from the Greek *ἅγιος-agios* (santo) plus *graphy* (writing), therefore: writing on a saint, more often defined by "biography of saint"; however, here it is used in the figurative sense of "excessively complimentary biography".

<sup>3</sup> To know biographies free from the hagiographic and laudative character, see: Bruno, 1972: 06-41; Leon-Jones, 1997: 01-6; Benavent, 2004 and Blum, 2012; also, for updating and review the academic studies on Bruno, see: Gatti, 2011.

were prophets, seers or visionaries. This is now the case of Giordano Bruno (1548-1600), after the discovery of the first exoplanet (planet orbiting a star outside the Solar System) in 1995, with confirmation by the highest echelon of the astronomical community (see Frei, 2003, Mason, 2008 and Perryman, 2011). For, this Renaissance philosopher drew from the authors of the past the idea that the stars are suns with planets, like the Solar System, orbiting around them. Then we recall the titles attributed to him by his admirers: "Giordano Bruno, the Apostle of Theosophy in the 16th Century" (Besant, 1913), "The Philosopher of the Infinite" (Miguel Angel Granada), "The Martyr of Science" and "The Prophet of the Infinite Universe" (Del Giudice, 2014).

The author Eva Martin gathered the following praises from other authors: "A comet that shone through Europe", "This sparkling flame of a ferocious life" and "The red glow of Bruno's funeral pyre was the rosy dawn of modern thought in Europe" (Martin, 1921: 07). The theosophist Annie W. Besant,<sup>4</sup> author of an apology widely read by esotericists, called him "fierce spirit", "wandering knight of philosophy", and "fiery soul" (Besant, 1913: 05). While other authors and biographers, from a different perspective, considered him "a failure in human relations, one devoid of social tact

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<sup>4</sup> She believed and theosophists hold that the Theosophist Annie W. Besant (1847-1933) was Giordano Bruno in one of her earlier incarnations (see, Theosopedia, entry Annie W. Besant, on the web).

and worldly wisdom, and an unpractical to an almost insane degree" (Bruno 2002: xi).<sup>5</sup>

The glimpse and presumption of facts by speculators may or may not be confirmed scientifically in the future. Look at the example of the admiration and worship of the sun since Prehistory, when almost all ancient peoples had a form of worship to the Sun, since they, from ancient times, had glimpsed that its light and its heat were indispensable for the life on earth, essential for agriculture, for maintaining the temperature bearable, for evaporation, etc. Then, a strong admiration for the sun, whose divine status was attributed to him, developed with specific names in each culture (Helios (Ἥλιος), *Sūrya* (सूर्य), etc.), as well as, respective rites of greeting were created and developed for these gods (for example, *Sūrya Namaskāra* in Hinduism). However, today, no educated people practices these services to the sun god any more. For, the development of scientific knowledge and the increase in the capacity for space exploration have revealed that the nature of the sun is very different from that of the ancients thought, then the charm of the sun has disappeared. Today we know that the nature of the sun is not as divine as the ancients imagined, for it is one of the trillions of stars in the universe, as well as one among other types of stars (supernova, white dwarf, pulsar, brown dwarf, giant red, etc.), we now know its

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<sup>5</sup> These characteristics of Bruno are displayed in the film of Giuliano Montaldo, through the formidable performance of the actor Gian Maria Volonté.

chemical composition, its age, its distance from the Earth, its end and, what is more demythologizing, its harmful character (solar explosions and ultraviolet rays). Strictly speaking, much of the sun's benefit is in the presence of the Ozone Layer, as a filter; otherwise, life on Earth might not be possible. Therefore, today we know that we owe much to Ozone Layer.

As for the sun, Giordano Bruno, for example, imagined "a similarity between the Sun and the Earth, which were composed, albeit in different proportions, of the same elements". Following the conviction of Nicholas of Cusa (1401-1464), he believed that "the Earth, the Moon and the Sun should be considered luminous" (Gatti, 1999: 119). In the Fourth Proposition of the Third Dialogue of *La Cena de le Ceneri* (The Supper of Fourth Ash Wednesday, 1584), he stated that "in a certain comparison, the Earth would be as hot as the Sun" (Bruno, 1972: 149). Allegations far removed from what was discovered by astronomers in the following years, therefore far from being prophecies.

The study below is intended to show one of many examples of glimpses of past speculators, which have confirmed their assumptions and their superficialities, but disagreed in almost everything in their details after the advance of scientific knowledge. That is, Giordano Bruno, like other thinkers before him, intuited the possibility of each star being a sun with planets orbiting around them, as well as the existence of an infinite universe, however, when we consult the details by which he explained these realities, we realize that not almost everything he explained was confirmed in

subsequent research. So, when we get a very broad view of his immense work, he wrote a lot, about 60 books, some extensive, about cosmology and astronomy were four main ones, we are led to think that he, along with previous authors, intuited the infinite universe and the existence of exoplanets through a stroke of luck. That is, he wrote so much that at least a few things he would have to hit, for he hit only on it and missed most of the rest of his cosmology.

What sustains admiration for these glimpses of the past is the cultural habit of promoting cultural successes and triumphs and ignoring and dismissing mistakes and failures. Those successful ideas of an author are preserved and praised, while unconfirmed ideas are ignored and forgotten. Look at the example of Isaac Newton (1642-1727), he is remembered, venerated, and taught in schools as the Father of Classical Physics and the discoverer of gravity, but few are aware of his comments on the Bible as well as his interest in Alchemy and Magic. This fact happens with almost all the authors of the past. Curious is also the case of Nicolaus Copernicus (1473-1543), his great work *De Revolutionibus Orbium Coelestium* (On the Revolutions of the Celestial Spheres), one of the most important works in history, so important that it began the Modern or Scientific Age, work in which the heliocentric theory was formulated, a revolution so formidable that it exceeded the limits of astronomy, to influence our world view. In this work, he elaborated his heliocentric theory, but accompanied by many more ideas, due to the limitation in the capacity of astronomical

observation of that time, that did not have astronomical confirmation in the future. Therefore, those who have never read *De Revolutionibus*, but have heard of Copernicus, think that everything in his work had scientific confirmation later, but it was not so. To give just one example, he thought that the planets orbited the sun through orbital bands suspended in the sky, which guided and sustained the planets, such as the medieval conception, so that they did not collide with each other or fall down due to the weight, since gravity was not yet known. Giordano Bruno, who defended the heliocentric conception but enlarged it with the addition of other speculations, disputed this idea of orbital bands and elaborated another theory that was not confirmed either.

### **The Commotion of the Martyrdom**

Through the history, we realize that the characters who suffered martyrdom are more likely to be proclaimed heroes or sages, due to the commotion that the act of martyrdom leaves in posterity, than those who did not martyrize. Besides, martyrdom draws attention to its author, putting his life, his acts and his thoughts in prominence. There is no doubt that Christianity benefited in its growth from the commotion of the martyrdom of Jesus and that of the early Christians. This is what also happened to Giordano Bruno, his popularity is due largely to his martyrdom, since he did not retract himself before the Inquisition court, then he was executed as a heretic at the stake on February 17, 1600, in Rome. One of her greatest admirers, the



Theosophist Annie W. Besant, exalted him thus: "with his words he was able to vivify life, with his martyrdom he was able to overcome death" (Besant, 1913: 05). In short, Giordano Bruno was martyred for his philosophy to survive.

An example of the greatest power of martyrdom in proclaiming its authors lies in the fact that the theologian Nicholas of Cusa (1401-1464) spoke of the infinity of the universe before Giordano Bruno, but was not proclaimed "prophet of the infinite universe", for not to have been martyred (see, Gatti, 1999: 119). Moreover, what is even more intriguing, more than fifteen centuries before Nicholas of Cusa and Bruno, the Epicureans already spoke of the infinite universe and the other worlds similar to the Earth. The book *De Rerum Natura* of Lucretius (96-55 b.c.e.) is full of mentions to the other worlds and to the infinite universe. In Book II, 1070, it is clearly stated "... that in other parts of the universe there are other worlds inhabited by many different peoples and species of wild animals" (Lucretius, 2001: 62; see also: xxxiii, 35 and 173). Even before Lucretius, Epicurus (341-271 b.c.e.), founder of the Epicurean School (Κήπο-Κεπο; Garden), spoke on the infinity of the universe and the infinite number of worlds.<sup>6</sup> Epicurus and Lucretius were not proclaimed "prophets of the infinite universe" either. In the words of Karen Silvia de León-Jones: "More than closing this episode of heresy, Bruno's condemnation opened the first chapter of the

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<sup>6</sup> Letter to Herodotus § 41-2; Bailey, 1926: 23 and Letter to Pythocles § 89; Bailey, 1926: 59.

philosopher's myth. From Bruno's contemporaries to the present day, it is commonly accepted that Bruno died because he refused to retract his religious and philosophical beliefs. His stubborn adherence to the self-proclaimed 'Nolan Philosophy' won the admiration of many in the following centuries, along with the disgust of others" (Leon-Jones, 1997: 02). In short, Bruno's proclamation was motivated by the commotion of his martyrdom.

His moving life of martyrdom was the subject of a film with his own name, starring Gian Maria Volonté, in the role of Bruno and directed by the Italian Giuliano Montaldo, released in 1973. The DVD version released in Brazil was published accompanied by the following phrase: "The History of a Man Ahead of his Time". This is just a complimenting phrase with the aim of promoting the film, because, as we will see later, Bruno was not a thinker with a forward-looking vision, but rather, turned predominantly to the works of the past, where he drew almost all his ideas, so he is considered a Renaissance thinker.

### **When the Advance is in the Past**

The name Renaissance itself already defines the moment, bringing something to life again. This was the time in the late Middle Ages, when intellectuals and artists turned their attention to classical past in order to seek inspiration for their ideas and their creations. The goal was to rescue the Golden Age, succeeded by the corrupted Iron and Bronze Ages. For the Renaissancist, the past was always better, and

the present was degeneracy. As for sciences and philosophies, the older, the wiser. Plunged, as they were, in an era (Middle Ages) with little progress in knowledge, the solution was to seek advancement recovering the ideas of the past. In short, Renaissance culture was a retrospective culture.

Giordano Bruno was an example par excellence of this period. Except for the innovative astronomical ideas of Copernicus and other few thinkers of close generations (Marcílio Ficino, Pico della Mirandola, Nicholas of Cusa and Raimund Lulio), his interest was in old ideas: Platonism, Epicurism, Neoplatonism, Hermeticism, Pythagoreanism, Magic, Alchemy, Astrology and other antiques. By not being an experimental researcher, such as Galileo, he draws his conclusions through logical deductions, based on speculations of ancient authors. He considered himself a philosopher. Therefore, his reasoning was coherent and brilliant, when we exclude the confusing passages of his works, but his conclusions were not confirmed experimentally in the following years with the awakening of interest in scientific experimentation. Not having left contributions in the field of science and few in the area of philosophy (only some among the romantic philosophers), because of his deductive speculations, Bruno was admired, and still is, only by esotericists.

Strictly speaking, Bruno's only contribution to posterity is not in the value of his ideas, but in the value of his spirit, that is, in his uncompromising abdication of freedom of research and expression, which led him to refuse during his trial in Rome, so he was convicted and executed.

This is the Giordano Bruno's legacy that we still enjoy today. His relentless struggle for autonomy of research and freedom of expression. Hilary Gatti put this idea in the following way: "His insistence (Bruno) on putting this question (of free thought and freedom of expression) at the center of both (that is) of his works and his defense is the motive because Bruno remained a figure of the modern world" (Gatti, 1999: 19).

### **The Errant Life**

The adjective errant has two meanings, that of "one who errs," "one who deceives himself", or a second meaning of "one who has no fixed abode", "nomadic" or "itinerant". Derivative of the Latin *errāns* (errant), from the Latin verb *errāre*, "to walk by chance", "to deviate from the path" and "to lose".

Coincidentally, Bruno's life incorporates these two meanings, for he was an errant who wandered from town to town, just like a nomad, trying to teach his ideas, but was always excommunicated or expelled by those who did not accept them. As well as being an errant in the sense that not almost all of his retrospective ideas were recognized later, therefore understood together as an error, since they were released on the eve of one of the greatest changes in the history of human thought: the Scientific Revolution.

The exaltation of some admirers that Giordano Bruno was, along with Nicholas of Cusa, the most important philosopher of the Renaissance, or that he was an "enlightened and coherent thinker" as well as a "giant of thought"

(Del Giudice, 2014: 03), sounds like overestimations in the ears of other historians of philosophy. For, he is not even mentioned in some books on Renaissance (Hunt, 2005 and Brotton, 2006). In some encyclopedias and in some philosophy dictionaries, he appears only in short entries, with a maximum of two paragraphs (Audi, 1999: 103 and Streissguth, 2008: 58), in comparison with other philosophers with much longer entries. The *Cambridge History of Renaissance Philosophy*, a 930-page book, devoted only three pages to Bruno (Schmitt et al., 2008: 254-6). In the chapter *The Philosophy of the Italian Renaissance*, by Jill Kraye, in *Routledge History of Philosophy, volume IV, The Renaissance and 17th Century Rationalism*, Kraye dealt with Bruno in only three paragraphs, with the following conclusion: "Some of Bruno's ideas had a limited influence after his execution, but his philosophy never gained a wide following" (Kraye, 2005: 45). Karen Silvia de León-Jones also noted "Reasonably ignored by the official philosophers of the Enlightenment (his work was and is, after all, in the Index of Prohibited Books), his name was whispered but not quoted" (Leon-Jones 1997: 02).

Strictly speaking, Giordano Bruno's entourage survives in the esoteric milieu, that is, among the rosicrucians, theosophists and masons. These, with their frequent tendency to find wisdom in the speculations and practices of the past, claim that Bruno was an initiate in the ancient mysteries. Finally, Bruno is important only as a thinker of Renaissance occultist, and not as a philosopher or a scientist for posterity, as Nicholas Copernicus, Galileo, Descartes, Johannes Kepler, Isaac

Newton and Francis Bacon were to the future of philosophy.

That Bruno was a troublemaker, he himself recognized, for in the front page of his work *Candelaio* (The Bearer of the Candle), published in 1582, he referred to himself as "*Bruno Nolano, Academico di nulla Academia, detto il Fastidio*" (Bruno of Nola, Academician of no Academy, known as Troublemaker). That is, he considered himself a "boring".

Giordano Bruno was born in San Giovanni del Cesco, near Nola, in the kingdom of Naples, a place under Spanish rule at that time, in the year 1548. Therefore the reason for being known as the Nolan philosopher, he himself called himself Nolan in his texts. His name of baptism was Felipo, probably in honor of the throne heir of Spain, the name Giordano was given to him when he entered the Dominican convent of San Domenico Maggiore, in the Order of the Preachers, in 1565. He was ordered priest in 1573 and, in this year, celebrated his first mass.

His irreverent temperament manifested itself early in the day when he decided to remove the images of saints from his chamber, keeping only the crucifix. In addition, his suggestion for a novice to replace the reading of a text of Virgin Mary by reading the Lives of the Holy Fathers cost him the first complaint, which, for the first time, did not progress. In 1572, he spoke of his doubts about the Trinity and defended the position of *Ario* (theologian contrary to the conception of the Trinity, who was repudiated at the first councils) that it was not as pernicious as had been thought. Then he was denounced in 1575. In February

1576, Bruno fled to Rome, where he obtained the news that, after his escape, it was discovered that he had read the forbidden works of Erasmus, as well as the accusation of having murdered and thrown in a river a companion of the Order that had denounced him. Nevertheless, the accusation of the murder was not confirmed. He then fled from Rome to northern Italy, where he wandered around in various places, always trying to teach (Benavent, 2004: 12 and Blum, 2012: 09).

After passing through Lion and Toulouse, he arrived in the city of Paris in 1581, where it caught the attention of the intellectual circles around King Henry III by its formidable memory. There he found the open environment he was looking for, so, in the following year, 1582, he published his first work, *De Umbris Idearum* (On the Shadows of Ideas), a treatise on mnemonics. When all seemed well in Paris, religious conflicts arose and the Nolan went to England in April of 1583.

With the help of the French ambassador in London, Bruno was able to enter the intellectual world and to join the Oxford University as a participant in academic disputes. Then he got an appointment to teach a series of lessons at Oxford. However, these had a disastrous consequence. Bruno was accused of plagiarizing Marcilio Ficino, and then the lessons were abruptly interrupted. The Nolan philosopher, on the other hand, considered the Oxford scholars as pedants and satirized them in the Fourth Dialogue of his Italian work *La Cena de le Ceneri*, published shortly thereafter, 1584. To write this dialogue, Bruno, who had already returned to London, was inspired

by a debate meeting, at the invitation of Sir Fulke Greville, to discuss his version of Copernicus. The discussion took place in Greville's residence, on the afternoon of an Ash Wednesday, where Bruno and two Oxford doctors debated, the latter defending the Aristotelian-Ptolemaic cosmology of the still and central Earth. However, the discussion ended abruptly and in an unfriendly manner.

In the same year of 1584, Bruno published three more cosmological texts in the form of dialogues in Italian: *De la Cause, Principe et Uno* (On Cause, Principle and Unity), *De L'infinite Universo et Mondi* (On the Infinite Universe and the Worlds) and *Spaccio de la Bestia Trionfante* (The Expulsion of the Triumphant Beast). With the worsening of relations between England and France, the French ambassador in London, who protected Bruno, was called back to Paris and the Nolan philosopher accompanied him. Bruno arrived for the second time in Paris at the end of 1585 and found an atmosphere very different from the one he left in the spring of 1583.

Soon, as always, Bruno created a disagreement with the Salerno geometer, Fabrizio Mordente, who had built a compass capable of measuring small fractions. Initially, Bruno had a friendly relationship with the geometer, but then began to disagree with him, thereby introducing him as an "ignorant who did not know what was in his hands and ignorant of the profound implications of his invention". For Bruno conjectured that the compass was capable of proving that matter has a minimum, that is, the atom, and thereby challenging the Aristotelian conception that matter has no minimum element, but Mordente did not



agree with it. In a dialogue published in 1586, he called him "Idiot Triumphant."

Immediately afterward, Bruno became involved in another complication in preparing a thesis for a public dispute at the College of Cambrai at the University of Paris, where the royal teachers used to teach. On the day of the dispute, the spokesperson for Bruno, his disciple Jean Hennequin, was challenged by an opponent who defended Aristotle; he was Roger Callier, a lawyer linked to the group of politicians close to the king. The dispute ended in a general fight and, a few days later, Bruno, convinced that he had lost the support of the royal party, and also put on him the threat of Mordente's appeal to the ultra-Catholic party, went to Germany.

When he got there, he initially wandered through some cities without being able to find a job; he finally got an appointment at the University of Wittenberg to teach Aristotle's logic and other philosophical matters. In the city of Luther, the Nolan remained for a year and a half, when he had the opportunity to publish some more works of his own. The atmosphere was fine until the arrival of the new Duke of Calvinist affiliation in the region, so the Calvinist faction put an end to the tolerance that the Lutherans had maintained. Therefore, Bruno left the university in March 1586 with a Farewell Address (*Oratio Valedictoria*), in which, as usual, he included his usual insults to "subjects who were not men, in the strict sense of the word, but beasts by the level of knowledge they manifested under human appearance".

From there Bruno went to Prague, attracted by the figure of Emperor Rudolf II, whose

intellectual patronage and interest in the new philosophy, as well as the open religious and irenistic outlook, were well known. Bruno took advantage of publishing some of his works, got even a donation in money from the emperor, in exchange for the dedication to the emperor in his works, but it was only this. From Prague, he went to Helmstedt, where the pastor of the local Lutheran church excommunicated him.

From Helmstedt, Bruno went to Frankfurt in the beginning of 1590. There he taught private lessons and acquired the reputation of "a man who did not have a religion". The local senate refused to apply for accommodation at the publisher Johann Wechel's residence, which was equivalent to an expulsion order from the city. Therefore, Bruno stayed in the Dominican convent with the help of his editor. Due to the expulsion order, Bruno went to Zurich, where he taught to a group of young doctors lessons of scholastic philosophy that later, in 1595, when already in prison, were published with the title of *Summa Terminorum Metaphysicorum* (a small dictionary of metaphysical terms with comments). Then he returned to Frankfurt to publish two more Latin poems.

Then, surprisingly, he received an invitation from a Venetian patrician, Giovanni Mocenigo, who had come to the fame of his effective and prodigious memory, to stay in his mansion in exchange for teaching the secrets of this art. Bruno decided to return to Italy, decision which most of his biographers considered a recklessness. However, before heading for Venice, Bruno went to Padua, hoping to get a chair at the

local university. Meanwhile, he taught some private lessons to a group of German students. He was assisted by a former student, Besler, now a professor at the University of Padua, but with the latter's return to Germany in November 1591, then Bruno's attempts to teach at university were frustrated. Finally, Bruno was obliged to accept Mocenigo's invitation.

Bruno finally settled in the mansion of the Venetian patrician in March of 1592, in order to teach him the art of memory. However, Mocenigo became dissatisfied with the teachings he had received from Bruno, thinking that he was hiding the most important secrets. Then, when Bruno asked permission to go to Rome to publish some of his works, Mocenigo suspected that he intended to flee, arrested him in his mansion on March 22, 1592, and then denounced him to the Inquisition (Benavent, 2004: 26 and 85).

### **The Trial and the Condemnation**

Giovanni Mocenigo denounced to the Venetian Inquisition the following declarations of Bruno:

- That he did not like religions
- That he had denied transubstantiation
- That he opposed Mass
- That Christ was a seducer and a magician, and that his miracles were merely apparent
- That in God there was no distinction of persons
- That he had affirmed the eternity of the worlds and the existence of infinite worlds, the existence

of transmigration of the soul and other heresies (Benavent, 2004: *passim*).<sup>7</sup>

In this early Venetian trial, Bruno was willing to acknowledge his mistakes, so he retracted on June 3, 1592. However, the news of his arrest and the Venetian trial reached the Inquisition of Rome in September 1592, which requested his extradition, alleging that Bruno was from Naples, not from Venice. In addition, there were already two inquiries against him, one in Naples and one in Rome, which had not yet been completed. After some resistance, the state of Venice granted extradition in February 1593. Then Bruno was transferred to Rome and imprisoned in the prison of the Holy Roman Office on February 27, 1593.

The Roman trial lasted seven years, going through different phases. Soon after, the accusations were aggravated by the arrival in Rome of the statements of one of his cellmates during the Venetian trial. Another aggravating circumstance occurred when the Roman Court decided to censure the Brunian works, and then, in March 1597, gave Bruno a list of eight heretical propositions extracted from his books, which he should retract.

Due to the loss of the trial minutes, during the Napoleonic wars, information about the trial is now taken from the *Sommario del Processo*,<sup>8</sup>

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<sup>7</sup> These claims and others by Bruno also appear in testimonies of his cellmates (Benavent, 2004: *passim*).

<sup>8</sup> The work of Júlia Benavent, *Actas del Proceso de Giordano Bruno*, is extracted from this *Sommario*.

published in 1942, which summarizes Bruno's responses and allows the identification of the incriminating theses. Some scholars suggest that the eight propositions were:

- 1) Maintenance of opinions contrary to the Catholic Faith and statements against it and its priests
- 2) Opinions contrary to the Catholic Faith on the Trinity, the divinity of Christ and the Incarnation.
- 3) Opinions contrary to the Catholic Faith concerning Jesus as Christ
- 4) Opinions contrary to the Catholic Faith regarding the virginity of Mary, the mother of Jesus
- 5) Opinions contrary to the Catholic Faith on Transubstantiation and Mass
- 6) Allegation of the existence of a plurality of worlds and their eternity
- 7) Belief in metempsychosis and the transmigration of men into animals
- 8) Involvement with spells and divination.

The Court ultimately demanded of Bruno his retraction as a philosopher, the recognition of the superiority of theology over philosophy, the acceptance that theology (not philosophy) was the depositary and truth-setting instance, including questions philosophical. It also demanded his renunciation of philosophy, as well as his Copernican conception of the infinite universe and its relation to divinity.<sup>9</sup>

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<sup>9</sup> The references to the infinite universe and the infinity of worlds do not appear only in Bruno's writings, but also in Mocenigo's denunciations and in the testimonies of his cellmates, the latter reported from conversations in prison (Benavent, 2004, *passim*).

He refused to retract, for Bruno said that "he should not even want to repent, he had no regrets and he did not know what to repent of", so he was sentenced to death at the stake by the Court of the Inquisition in Rome, on January 20, 1600. The execution took place at *Campo dei Fiori*, Rome, on February 17, 1600. During the reading of his conviction sentence, before the Inquisition Tribunal, after Pope Clement VIII ordered that he be sentenced as stubborn, impenitent and heretic, he uttered the memorable phrase before his accusers, which so moves his admirers: "You pronounce the sentence with more fear than I do upon hearing it" (Gatti 1999: 18) .

His condemnation also extended to his works, all his books, which were in the possession of the Holy Office, and those, which came to be obtained after, were to be burned in St. Peter's Square, and included in the Index of forbidden books. The inclusion took place in August of 1603 by means of an edict of the Sacred Palace's minister. The prohibition was repeated in all indexes published later until the twentieth century, although it did not completely prevent the circulation of clandestine copies, especially in the regions with the greatest Protestant influence. In the nineteenth century, the resurrection of the Bruno's works took place through the first complete editions of his Italian and Latin works (those that survived).

### **Extracts from Hagiographies**

The reports and evaluations of the hagiographers on Bruno differ considerably from

those of the biographers. For example, the theosophist Annie W. Besant, author of a hagiography widely read by the esotericists believed that Bruno's ideas were innate in him, for he had gone through the experiences of various reincarnations and had been Pythagoras in one of his earlier lives. "These ideas were innate in Bruno, the fruit of a long series of lives in which he had known the great Incarnate Being as Pythagoras, and these innate ideas quickly became articulate language as soon as he studied the ideas of Copernicus" (Besant, 1913 : 08). This author also believed in the permanence and even the actuality of Bruno's retrospective ideas: "the thesis rejected in the sixteenth century is being avidly accepted in the twentieth century". "The message smothered by the smoke of his martyrdom is ringing through Europe now". "His voice died in his throat, but it is now echoing around us, for to know to die in a century is to live for all the next centuries". "Their thoughts have taken the course of immortality, and they are spreading through the modern world, they are Theosophy" (Besant, 1913: 10). In this last sentence is the example that Bruno's retrospective speculations please mainly the esotericists.

Another hagiography is of Guido del Giudice, written to the liking of the rosicrucians and esotericists in general. Omitting Bruno's many disastrous relationships, as we have seen earlier, as well as selecting only his reasonably acceptable ideas and putting them up to date, he considered that "Giordano Bruno was a genius thinker, anticipated for his time, to the point of to be considered as one of those 'Mercuries' sent to

Earth at pre-established times, inspired by a prophetic vision of humanity and the universe". Later he added that Bruno "was a man who knew his own worth and respected that of others ..." (Del Giudice, 2014: 02). Further on, he noted that Bruno's ideas "rested on the foundation of his mere intuition, by chance genial, but not acceptable to the emerging scientific mind, because of an abstemious mathematization". "But here is the greatness of Bruno, which makes him a true and true prophet, the fascinating of a complex personality, the cult of natural magic, of mnemonics, all evocative activity and precursor of modern development". Also, that "his spirit was not that of a martyr, but that of an enlightened and coherent thinker, delicate to the extreme" (idem: 03). In addition, that "Bruno is a great sensitive" (idem: 17).

The contrasts of these compliments with the reports and evaluations of other authors and biographers were seen in the previous sections of this study, so that a comment would now be repetitive. Now, what draws most attention among these compliments selected above is the statement that Bruno "knew his value and respected that of others". Well, what we extract from his texts and his biographies is the opposite, for he was an insubordinate and a troublemaker who called himself as "*fastidio*" (annoyance). In his dialogues, he often defied the others, one of the offenses was to address the interlocutor as "dumb" (Latin: *asīnus* - Italian: *asino*). In addition, much of his disrespectful temper and debauchery can be noticed in the testimonials of his cellmates (Benavent, 2004: passim). The excessive self-



recognition of his worth led him to pride, as we shall see in the next section.

These are just a few complimentary excerpts written by esotericists, if we include all the praises here, this study would become very extensive.

## **The Errant Philosophy**

In one of the preceding sections, we have shown Bruno's errant life in the sense of a nomadic, itinerant life whose permanence was very short in every place in which it was established. From now on, we will speak of his errant thought, in the sense of erroneous thinking, that is, his mistakes, since his conceptions have been little used by succeeding generations.

Without restraint and modesty, Bruno considered himself destined by the high deity to be the prophet of a better time that had begun. In addition, he thought he was beginning a new era that put an end to a historical period dominated by two heralds: Aristotle and Christ. He firmly believed that he was initiating a better era, whose authentic philosophy returned as an intellectual undertaking and of higher personalities, in view of its replacement in the preceding period by a pseudo-philosophy or vulgar philosophy, which had usurped the name of philosophy. In addition, the path of the reduction of philosophy and science to mere servant of theology and religion, because of the need of all men for the faith in Christ as the only possibility of salvation.

In the testimonies of Giovanni Mocenigo and his cellmates, they reported that Bruno

"intended to become the author of a new sect with the name of new philosophy" (Benavent, 2004: 31 and *passim*). Therefore, Bruno considered himself the author of a grandiose mission.

That a new era began soon after Bruno's death, history has confirmed this transformation, that is, the Scientific Revolution, but in a way and based on investigations very different from those conjectured by Bruno. At last, after Bruno, the thought changed, but not in the way he imagined.

Bruno wrote many works, some 60 publications (León-Jones, 1997: 02 and 255-6), with only a few ones translated into other languages (the most important), published in several places, but a few did not survive. About cosmology, were mainly four works. He dealt with countless subjects, so that each interpreter could emphasize one subject more than others and thereby interpret that he was more a Hermetic magician than anything else (Frances A. Yates), that he kept secret contacts with members of the Rosicrucian Brotherhood (Guido del Giudice). Or, that he was a sixteenth-century theosophist (Annie W. Besant), an eclectic scientist, a prophet, an alchemist, an astronomer, a natural philosopher, a mnemonic master or what appears to be the most reasonable about him, a Renaissance philosopher well inserted in the Renaissance Movement. Finally, with the exception of academics with global views, many authors, especially the esoteric ones, drag Giordano Bruno to their sides and divulge him by extracting only the part that interests them.

Here in this study on Bruno's cosmology, we are concerned with his Italian cosmological works in the form of dialogue: *La Cena de le*

*Ceneri* (The Ash Wednesday's Supper), *De la Cause, Principe et Uno* (On Cause, Principle and the Unity), *De L'infinite Universe et Mondis* (On the Infinite Universe and the Worlds) published in 1584, in the city of London. In addition, in Latin: *De Innumertabilibus, Immenso et Infigurabili* (On the Unnumbered Things, the Immensity and the Things Unformed), published in 1591. These are those Bruno's works where he most dealt with the thesis on the infinite universe and on countless worlds inhabited orbiting around stars. Conceptions that still move so much their admirers to this day, to the point of proclaiming him "prophet of the infinite universe". However, in the following study, we will show, through a deepening in his most astronomical works, the little that Bruno was right and the immense amount of details of these theses that was not confirmed by later astronomical researches. For he did not pronounce these theses simply, but supplemented them with many conjectural astronomical explanations.

Giordano Bruno lived at a time when astronomical observation instruments (telescopes, radio telescopes, space probes, space telescopes (Hubble), space observatories, planetary exploration robots, etc.) did not yet exist, so he highly valued knowledge by deductive reasoning. Because the instruments of observation for long distances did not yet exist, the telescope was about to be used by his contemporary, Galileo, and he did not like the use of mathematics in physical calculations, he valued his deductions drawn from limited astronomical knowledge through mere observation of the sky available at the time. Then, he came to affirm, through his *alter ego*,

Philotheus,<sup>10</sup> at the beginning of the first dialogue of the work of *L'infinite, Universe et Mondis* (On the Infinite, the Universe and the Worlds) that "it is the intellect which it is convenient to judge and to give reason for things distant and separated from distance of time and interval of space" (Bruno, 1993: 102 and Liaño, 2007: 168). Obviously, Bruno did not imagine the sophistication of instruments that would be invented in the future.

### The Errant Astronomy

In order to understand Bruno's cosmology, one must know the concept of world in his time. World did not only mean the Earth, but a perfect set that included the Earth, the Moon, the Sun, the planets and the stars, because all this was God's creation, therefore a perfect and harmonious creation, since God did not create anything imperfect, then all this was included in the perfect divine creation. Since this was all that was known of the universe, through the observation of the sky without instruments, so that there was no known region in the universe that was imperfect,

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<sup>10</sup> Bruno always used, in his dialogues, an interlocutor (*alter ego*) that represented his philosophy. In the dialogue, *De L'infinito*, his representative (*alter ego*) is Philotheus, in the dialogue, *Le Cena de le Ceneri*, his representative is Theophilus. One or more of the other interlocutors represented one or more philosophies which Bruno intended to criticize, in the case of *De L'infinito*, the philosophy criticized is Aristotelianism, represented by the interlocutor Burquo.

disharmonious or chaotic, so everything in the world (universe) was the perfection of god.

Bruno, who was a speculator who believed in world's creation by God, imagined the existence of other worlds similar to the model of our world with sun, planets, moons and stars, such as the Solar System. Because, if the world is the creation of God, other worlds would also be creations of God, therefore perfect and similar to ours, never chaotic and imperfect. So that other worlds could only be similar to the perfection of our world, God would never do something incomplete and imperfect. In Bruno's words, "... because the goodness of this corporeal being (god) that is in this space (our world) or could find itself in another space (world) equal to this, demonstrates and reflects the goodness and convenience which can be done in such a large space (world) as this (our) or another like this (our world) ... " (Bruno, 1993: 109). Anyway, if god were able to create a world as perfect as ours, it would also be able to create infinite other perfect worlds equal to ours. Therefore, Bruno concluded: "Therefore, it is not less well that there exist (as there can be) innumerable worlds similar to this ..." (ibid: 111). What astronomers already know today is that these other worlds are many different from our own, because even exoplanets that do not orbit stars, known as orphan exoplanets or nomadic exoplanets, have been discovered, which have been expelled from their solar systems by some gravitational conflict (to know what is known about exoplanets, see: Frei, 2003, Mason, 2008 and Perryman, 2011).

In the Fourth Proposition of Nundinio, in the Third Dialogue, of *La Cena de le Ceneri* (The Supper of the Ash Wednesday), Bruno compared the Earth with the other globes: "... the other globes, which are earths, are not in some point different from this (our globe) in kind ... " (Bruno, 1972: 149). He then made a strange speculation about the Earth: "... the Earth being an animal, and therefore a dissimulating body, should be esteemed as a cold body by some parts, especially external, ventilated by the air; which by other members, which are the most in number and size, must be believed to be hot and very hot ... ". He later conjectured that "... the Earth would be as hot as the Sun". In part three of the Second Dialogue of *Spaccio de la Bestia Trionfante* (Expulsion of the Triumphant Beast); Bruno conjectured that the other worlds were so equal to ours that even Ethics would be similar: "... Ethics on account of customs, conduct, law, justice, and crime can exist in this and other worlds of the universe" (Bruno, 1991: 155).

Because Bruno was unaware of the existence of gravity, he imagined that the planets were moved by the soul, so he surmised that "everything goes towards its similar and flees otherwise", then he concluded that "the earth and the other planets move, therefore, according to their own local differences from their intrinsic principle, which is their own soul". In addition, he proposed that the souls of the stars are smarter than ours: "the soul is not only sensitive, but also intellective, not only intellective as ours, but perhaps even more (intellective)" (ibid, 152). In the dialogue *De l'infinito*, Bruno reinforced the

conjecture that bodies are moved by the soul: "... the worlds contained within it (the universe) being infinite, as are the earths, fires,<sup>11</sup> and other kinds of bodies called stars, all move by virtue of their inner principle which is the soul itself. (...) so it is useless to go looking for its external engine".<sup>12</sup> In addition, "the earth revolves around the center itself in various ways<sup>13</sup> and around the sun by virtue of its internal animal instinct" (Bruno, 1993: 124).

At the end of the First Dialogue of the work *De l'infinito*, Bruno provided another confusing speculation about the earth's rotation, so confused that he used a drawing to explain, whose movement is not continuous but rather in the form of a 'back and forth' movement: "Therefore, in a single moment it goes back and forth, and as it is always so, it occurs that it is always very immobile" (Bruno, 1993: 126). The passage is so strange that the Spanish translation of Ignacio Gómes de Liaño omitted this passage (Liaño, 2007).

In the second paragraph of the Second Dialogue of *De L'infinito*, Bruno made another strange conjecture about the relation of certain objects to infinity: "If we see that a body has the capacity to grow to infinity in its bodily quality, as seen in the fire, which (according to so many

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<sup>11</sup> Maybe referring to comets and falling stars.

<sup>12</sup> A reference to the Aristotelian conception of the First

Engine.

<sup>13</sup> Strange statement, for, around itself, the Earth only executes the rotation movement. In another passage, he argued that the earth's rotation movement is in the "back and forth" sense (Bruno, 1993: 126).

admit) would grow to infinity if food and matter had approached it. Why can fire, which can be infinite and therefore can be made infinite, be infinite in act?" (Bruno, 1993: 130). Today we know that the fire does not have the capacity to expand to infinity, since, for that, the fire needs oxygen, which is only in the atmosphere. In vacuum, which occupies almost the entirety of the universe, there is no oxygen in abundance, so that the fire is not able to expand. Perhaps Bruno and many others thought so because of the fire in the sun, unaware that the sun burns by the process of internal nuclear fusion, which was not yet known at the time, and not by the combustion of some external food (combustible).

Later, in the same dialogue, Bruno quoted Epicurus and the Stoics, thus confirming that they already spoke of an infinite universe and of the existence of other worlds long before (idem: 132). Following the same reasoning of other passages on the similarity of other worlds to our world, Bruno reinforced that: "We say thus that there is an infinite, that is to say, an immense ethereal region, in which there are innumerable and infinite globes, the moon and the sun, which we call worlds composed of fullness and emptiness, because this spirit, this air, this ether<sup>14</sup>

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<sup>14</sup> The idea of ether, a hypothetical all-pervading substance, very much believed by speculators in antiquity and in the Middle Ages, was proved a fantasy in the following centuries. Current knowledge points out that the most present matter in the Universe is Dark Matter. According to most physicists' estimates, the universe is composed of 4% Normal Matter, 23% Dark Matter and 73% Dark Energy.



not only exists around these bodies, but also penetrates within all of them and is inherent in all things (idem : 132). Just as Bruno imagined that the Earth, the Moon, and the other planets in our System had spirits, he also imagined that the globes of other worlds also possessed them. Moreover, just as our world has air, he imagined that all other celestial bodies also possessed an atmosphere like our Earth. In addition, in the Fifth Dialogue of *La Cena de le Ceneri*, Bruno mentioned other thinkers of the past who believed in the infinity of the universe: "Heraclitus, Epicurus, Pythagoras, Parmenides and Melisus ... recognized an infinite space, an infinite region, matter infinite, infinite capacity of innumerable worlds similar to this ..." (Bruno, 1972: 197).

Bruno also stated that the stars make turns, and that we did not see them because of the distance (Bruno, 1972: 196). Most likely, an admirer of Bruno would say that he prophesied the existence of Binary Stars and Multiple Stars, which are star systems whose stars orbit around a common center of mass, then they make turns, which only began to be observed through telescopes in the nineteenth century. The fact is that so many different species of stars have been discovered, with the strangest movements, that any statement that an uninformed say about the stars is able to match the shape or behavior of some existing stars.

In *De Immenso*, his last cosmological work, published in 1591, "Bruno proposed that the sun, which is in the center, not only rotates with a spiral motion around its own axis, but that it also moves around the center in an orbit with respect to

the celestial poles ... " (Gatti, 1999: 80). That is, Bruno replaced the Earth's elliptical movement, proposed by Copernicus, by a Sun's small elliptical movement around a point in the center of Solar System. For he believed that there were celestial poles to explain the phenomenon of Earth's precession (ibid: 80). In addition, devoid of instruments, he imagined that the planets Mercury and Venus orbited the Sun in the same orbit of the Earth, although in different positions of the orbit (ibid: 82). Strangely, in another next passage, he stated that Venus is a moon of Mercury, orbiting around it, just like the Moon around the Earth (Ibid: 82). In her analysis of work *De Immenso*, to exemplify the almost complete disregard for Bruno's cosmology, Hilary Gatti remarked that "Bruno's final scheme of cosmology, as set forth in *De Immenso*, was accepted only by William Gilbert (1544-1603), which accepted only the part concerning the Earth and the Sun" (ibid: 82).

### **The Errant Geology**

After Teofilo, Giordano Bruno's representative, affirmed that the earth has a soul and is sensitive, the interlocutor Prudencio made the following observation, in a somewhat comical way: "It seems to me that the Earth, being animated, should not feel pleasure when done holes and caves on its backs, just as when they cause us pain or disgust, when they implant a tooth or when they pierce the flesh". Bruno then explained "that the earth has sense organs, (but) does not have them similar to ours, if it has members, are not these similar to ours, if it has a

heart, is not the same as ours, etc." (ibid. 152-3). Living in a time when Scientific Geology did not yet exist, Bruno made a strange and confusing comparison between Earth and animals: "I believe that, in a way not unlike animals, which we know of such, their parts Earth, are in constant alteration and movement, and have a certain ebb and flow, always receiving something extrinsic inside and always sending out something extrinsic: from where, if the nails grow, they nourish the hairs, the skins and the hair, the hides are consolidated, the hides harden, so the earth receives the ebb and flow of the parts, by which many animals, as manifested to us, enable us to see their life expressly. As it is more than verisimilious, since everything participates in life, many and innumerable individuals not only live in us, but in all composite bodies ... " (ibid: 153).

Another strange explanation: "... since in the same way, that the sea is not on the surface, but in the bowels of Earth, as the liver, the source of humors, is within us, so this turbulent air is not outside, but in the same way as air in the lungs of animals" (ibid: 156). He then provided an incomprehensible explanation for the question that if we live in the viscera of the Earth, how we could see the whole hemisphere. After a confusing explanation, which included even a drawing, of how it is possible to live in the viscera of the Earth and at the same time to see the surface, he concluded by claiming that "it should not be considered a fable what Plato said about the great hollows and breasts of the land" (ibid: 156-9 and Liaño, 2007: 178-9).

## Conclusion

Well, Bruno's conjectural explanations about the universe, the worlds and the Earth are numerous, if we include all here, this study would make it very extensive, so that the collection above may be enough to convey a notion to the reader of his cosmology, which has not been confirmed in the future. Not only as to quantity, but also as to the high degree of mistakes of his fanciful speculations. Thus, perhaps the collection above may be sufficient for the reader to judge whether or not he deserves the honorable title of "Prophet of the Infinite Universe".

That Giordano Bruno was a confused writer, almost all scholars agree, except, obviously, his admirers. To justify, esotericists claim that these confusions are only apparent, for they are secret codes, the decipherment of which is made only by the initiates (Del Giudice, 2014, *passim*). He dealt with countless subjects, with sudden traffic from one subject to another, so diversified that the reading of his works became confused. Even the most dedicated scholars recognize the difficulties; see Hilary Gatti's remark, "*La Cena de le Ceneri* (The Ash Wednesday Supper) is not an easy book to read" (Gatti, 1999: 46). Paul Richard Blum also noted that Bruno's change of languages makes it difficult to understand his work: "... the change of philosophical languages would become one of the hallmarks of Bruno's philosophy, and it is this change that makes it hard to interpret his writings" (Blum, 2012: 08). Ernesto Schettino, one of the *Spaccio de la Bestia Trionfante's* translators (Expulsion of the Triumphant Beast), into Spanish,

noted in his prologue: "As Bruno's critics point out, there are many speculative fantasies in the midst of his conceptions ..." (Bruno, 1991: 18). A strict critic would say that almost everything written by Bruno is fanciful speculation.

Actually, he was right about the infinite universe and about the existence of other planets orbiting stars, but other authors had said these in the past. However, these are all he was right, since the extensive conjectural explanations that he elaborated to justify his theses, some justifications on the infinity of the universe extracted from Nicholas of Cusa, in addition to being very confused and excessively theoretical, were not confirmed later. Also, his project of founding a "New Philosophy" did not prosper.

However, we cannot totally take the merit of Bruno, although almost all his speculations have not been confirmed in the future, however we can attribute merit, not for his ideas, but for his attitude, that is, for his intransigent defense for autonomy of research and freedom of expression, whose price was his life. The lesson that Bruno's martyrdom taught us in the following centuries was that even if the two parties are wrong, that is, the Church with its irreversible attachment to dogmas, and Bruno with his speculations not confirmed in the future, we must always keep tolerance for the opinion of others, be open to dialogue and learn to benefit from the debate. Because it is from this confrontation that a third way will arise that will promote the progress of ideas. We must never consider that we are irreversibly right, lest we give in. This is the Giordano Bruno's voice that echoes to this day.

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